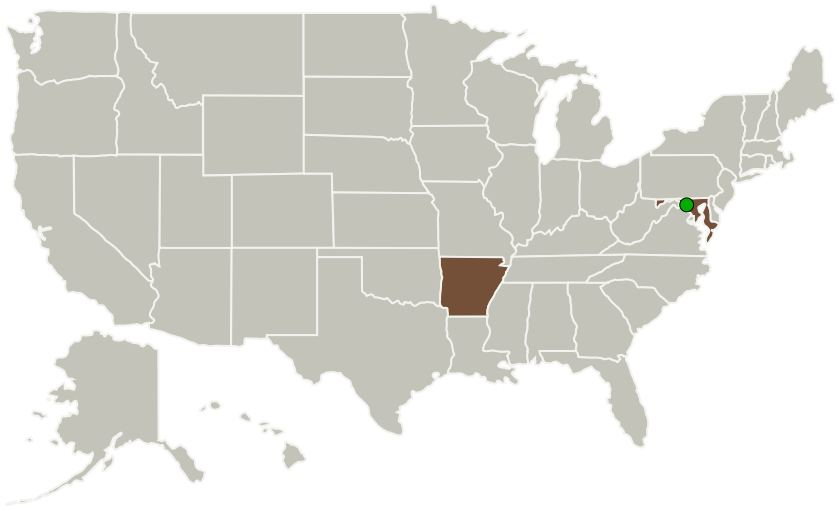
Highly Scalable SiC UV Imager for Earth & Planetary Science, Phase I

Completed Technology Project (2015 - 2015)

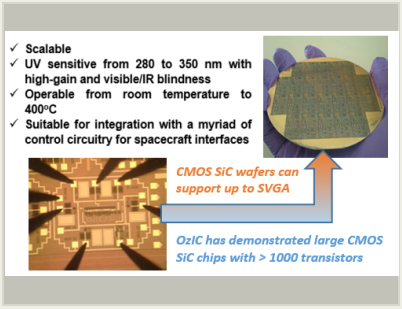
Project Introduction

Commercial silicon carbide (SiC)-based photonic sensors typically use p–i–n photodiode and reversed-biased Avalanche Photodiode (APD) detectors. These state-of-the-art SiC photodioides use the wafer substrate as one node of the device, thereby making monolithic integration of the device with control or analysis circuitry difficult, if not impossible. Ozark IC's new (patent pending) photo detecting devices are inherently suitable for integration in SiC-based low-voltage integrated circuit processes. By virtue of their construction, the photo-generation occurs efficiently and with very high gain. This proposal uses these high-gain photonic devices to construct the world's first monolithic SiC UV pixel sensor array. Also key to this proposal is Ozark IC's extensive library of SiC analog and mixed-signal IP and its expertise in extreme environment IC design.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Ozark Integrated Circuits, Inc.	Lead Organization	Industry	Fayetteville, Arkansas
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland



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Primary U.S. Work Locations	
Arkansas	Maryland

Project Transitions

June 2015: Project Start

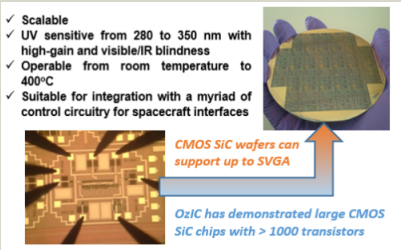
December 2015: Closed out

Closeout Summary: Highly Scalable SiC UV Imager for Earth & Planetary Science, Phase I Project Image

Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/138955)*

Images



Briefing Chart Image
Highly Scalable SiC UV Imager for Earth & Planetary Science, Phase I *(https://techport.nasa.gov/image/134508)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Ozark Integrated Circuits, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

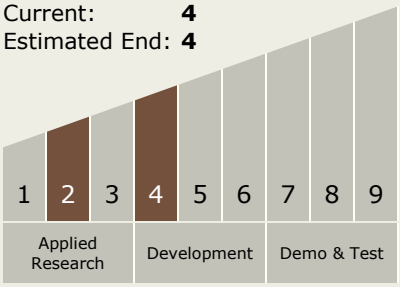
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Anthony M Francis

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System